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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER
PAUL, DISLER

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _3/23/09_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-25_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-25_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

The applicant's amended claim with the down-mixer for down-mixing segmented and

transformed representation of input signals to generate output signals to be conveyed in

the M output channels together with the parameter data" has been analyzed and

rejected with respect to newly prior art of Herre et al. (US 7,447,317 B2).


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Herre et al. disclose of a down-mixer configured for down-mixing

segmented and transformed representation of the input signals to

  generate corresponding output signals to be conveyed in the M

    output channels together with the parameter data (fig.1

  (12,14,18); col.9 line 1-22; col.9 line 51-67/down-mixing to

  generate such M output channels as in (fig.1 (18,20) and with

   parameter data (fig.1 (14) and generate the M channel (fig.1

    (18,20) and when converting/down-mixing the signals it is

 inherent property of such down-mixer to segment/fragment such

plurality of signals (multi-channels) for correctly enabling the

                    reduced signals).
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1.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

3. Claims 1-3, 6, 9-13, 16, 19-22; 25 are rejected under 35 U.S.C. 102(e) as being

anticipated by Herre et al. (7,447,317 B2).

Re claim 1, Herre et al. disclose of a multi-channel

encoder arranged to process input signals conveyed in N input

channels to generate corresponding output signals conveyed in M

output channels together with parametric data such that M and N

are integers and N is greater than M the encoder comprising: a

down-mixer configured for down-mixing segmented and transformed

representation of the input signals to generate corresponding

output signals to be conveyed in the M output channels together

with the parameter data (fig.1 (12,14,18); col.9 line 1-22;

col.9 line 51-67/down-mixing to generate such M output channels

as in (fig.1 (18,20) and when converting/down-mixing the signals

it is _inherent_ property of such down-mixer to segment/fragment

such plurality of signals (multi-channels) for correctly

enabling the reduced signals) and having an analyzer for

processing a segmented and transform representation of the input

signals either during down-mixing or as a separate process, said

analyzer being operable to generate said parametric data

complementary to the output signals to be conveyed in the M

output channels, said parametric data describing mutual

differences between the N channels of input signal so as to

allow substantially for regenerating during decoding of one or

more of the N channels of input signal from the M channels of

output signal, said output signals being in a form compatible

for reproduction in decoders providing for N or for fewer than N

output channels to enable backwards compatibility (fig.1

(14);fig.3A; col.9 line 23-38; col.11 line 8-23; col.12 line 33-

52/analyzer with cues of difference of the input channel and for

decoding compatibilities and such analyzer with sub-bands and

subset of the channels and thus segmented portion of the input

signal with backward compatibility as in fewer channels is

determined form the plurality of inputs (LC,RC)).

Re claim 2, the encoder according to claim 1, wherein the

encoder is a 5-channel encoder arranged to generate the output

signals and parametric data in a form compatible with at least

one of corresponding 2-channel stereo decoders, 3 channel

decoders and 4-channel decoders 9 (from the plurality of

surround input (fig.1 (10); create fewer channels output M

(fig.1 (20) for decoding).

Re claim 3, the encoder according to claim 1, wherein the

analyzer includes processing means for converting segments of

the input signals by way of transformation from a temporal

domain to a frequency domain and for processing these segmented

and transformed input signals to generate the parametric data
(fig.3A (140a); col.11 line 24-32/frequency analysis).

Re claim 6, the encoder according to claim 1, including a coder
for processing the input signals to generate M intermediate
audio data channels for inclusion in the M channels output
signals, the analyzer further being arranged to output
information in the parametric data relating to at least one of:
inter-channel input signal power ratios or logarithmic level
differences; inter-channel coherence between the input signals;
a power ratio between the input signals of one or more channels
and a sum of powers of the input signals of one or more
channels; and phase differences or time differences between
signal pairs (fig.3A (140f); col.12 line 20-28/channel and time
difference of the channels).

Re claim 9, the encoder according to claim 1, wherein at least
one of the input signals conveyed in the N channels corresponds
to an effects channel (fig.1 (10); with surround effect
channel).

Re claim 10, the encoder according to claim 1 adapted to
generate the output signals in a form suitable for playback
using conventional playback systems (fig.8; col.14 line 15-30).

RE claim 11, Herre et al. disclose of a method of multi-channel
encoding, the method comprising: (a) down-mixing, via a down-
mixer, segmented and transformed representations of input
signals conveyed in N input channels of a multi-channel encoder
to generate the corresponding output signals conveyed in M
output channels, wherein M and N are integers, wherein N is
greater than M (fig.1 (12,14,18); col.9 line 1-22; col.9 line
51-67/down-mixing to generate such M output channels as in
(fig.1 (18,20), wherein N channel (fig.1 (10) and M channel
being less (fig.1 (20); and when converting/down-mixing the
signals it is _inherent_ property of such down-mixer to
segment/fragment such plurality of signals (multi-channels) for
correctly enabling the reduced signals) ; and a processing, via
an analyzer, the segmented and transformed representations of
the input signals to provide said parametric data complementary
to the output signals conveyed in the M output channels, said
parametric data describing mutual differences between the N
channels of input signal so as to allow substantially for

regeneration of the N channels of input signal from the M

channels of output signal during decoding, said output signals

being in a form compatible for reproduction in decoders

providing for N or for fewer than N channels (fig.1 (14);fig.3A;

col.9 line 23-38; col.11 line 8-23; col.12 line 33-52/analyzer

with cues of difference of the input channel and for decoding

compatibilities and such analyzer with <u>sub-bands and subset of</u>

<u>the channels and thus segmented</u> portion of the input signal with

backward compatibility as in fewer channels is determined form

the plurality of inputs (LC,RC)).

Re claims 12-13, 16, 19 have been analyzed and rejected with

respect to claims 2-3; 6, 9 respectively.

   Re claims 20-21 have been analyzed and rejected with

   respect to claim 1.

Re claim 22, A decoder operable to decode encoded output data as

generated by an encoder according to Claim 1, said encoded

output data comprising M channels and associated parametric data

generated from input signals of N channels such that M <N where

M and N are integers (N with fig.1 (10) and M as in fig.1

(18,20) with less or fig.2 (28,30)), the decoder including a

processor: for receiving the M channels of encoded output data,

segmenting the M channels of encoded output data and

transforming the segmented data by converting it from a time

domain to a frequency domain (fig.2 (28,30); fig.5 (52); col.10

line 20-33; col.13 line 1-17) and for applying the parametric

data in the frequency domain to extract content from the M

channels to regenerate from the M channels regenerated data

content corresponding to input signals of one or more of N

channels not directly included in or omitted from the encoded

output data (fig.2 (32); col.10 line 35-45; col.13 line 1-17/for

recreating all the multiple channels); and for processing the

regenerated data content for outputting one or more of the

regenerated input signals of N channels at one or more outputs

of the decoder (fig.2 (36): col.13 line 25-35).

RE claim 25, the decoder according to Claim 24, said decoder

being operable to generate its one or more decoder outputs

solely from said M channels of encoded output data received at

the decoder (fig.1 (18,20); fig.2 (22)).

4.   Claims 4-5; 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Herre et al. (7,447,317 B2) and Tsushima et al. (US 2004/0028244 A1).

Re claim 4, the encoder according to claim 3, wherein at least

one of the down-mixer and the analyzer are arranged to process

the input signals (fig.1), But Herre et al. fail to disclose of

the specific wherein processing as a sequence of time-frequency

tiles to generate the output signals. But, Tsushima et al.

disclose of a system wherein processing as a sequence of time-

frequency tiles to generate the output signals (par [0008,

0032]/frames of discrete signals). Thus, it would have been

obvious for one of the ordinary skill in the art to have

modified the above with incorporating processing as a sequence

of time-frequency tiles to generate the output signals for

efficiently reproducing audio signal with fine precision.

Re claim 5, the encoder according to claim 4, but, the combined

teaching of Herre et al. and Tsushima et al. as a whole, fail to

disclose of wherein the tiles are obtained by transformation of

mutually overlapping analysis windows. But, it is noted having

the specific wherein the tiles are obtained by transformation of

mutually overlapping analysis windows is merely an obvious

variation of the designer's choice based on his need. Thus, it

would have been obvious for one of the ordinary skill in the art

to have modified the combination with the tiles are obtained by

transformation of mutually overlapping analysis windows for

efficiently reproducing audio signal with fine precision.

Re claims 14-15 have been analyzed and rejected with respect to

claims 4-5.

5.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herre et

al. (7,447,317 B2) and Scheiber (US 5,857,026).

Re claim 7, the encoder according to claim 6, but, **Herre et al. fail to**

disclose wherein having phase differences and said phase

differences are average phase differences. But, **Scheiber disclose of**

a system wherein having phase differences (col. 3 line 15-25/phase

difference as decolleration). Thus, it would have been obvious

for one of the ordinary skill in the art to have modified

combination with having phase differences for providing improved

separation between decoded signals for sound localization.

However, the combined teaching of Herre et al. and **Scheiber**

as a whole, fail to disclose of the phase differences are

average phase differences. But, it is noted having the specific

phase differences being average phase differences is merely the

designer's preference. Thus, it would have been obvious for one

of the ordinary skill in the art to have modified the combined

teaching of Herre et al. and **Scheiber** as a whole, with phase

differences are average phase differences for providing improved

separation between decoded signals for sound localization.

6.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable Herre et al.

(7,447,317 B2) and Baumgarte et al. (US 2003/0035553 A1).

Re claim 17, the encoder according to claim 16, but, **Herre et al. fail**

to disclose wherein having power differences and said power

differences are average power differences. But, Baumgarte et al.

disclosed of a system wherein the specific wherein having power

differences (par [0074]/power difference of the input level

signals for determining ILD in localizing). Thus, it would have

been obvious for one of the ordinary skill in the art to have

modified the above with the having power differences for

generating the spatial cues or localization of the signals.

However, the combined teaching of Herre et al. and Baumgare

et al. as a whole, fail to disclose of the power difference

being <u>average</u> power difference. But, it is noted the concept of

having such power difference being <u>average power</u> differences is

merely the designer's preference. Thus, it would have been

obvious for one of the ordinary skill in the art to have

modified the above with having power differences and said power
differences are average power differences for providing improved
separation between decoded signals for sound localization.

7.   Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable Herre et al.
(7,447,317 B2).

Re claim 23, the decoder according to claim 22, wherein said
processor is operable to apply a decorrelation filter to obtain
decorrelated versions of signals for use in regenerating said
one or more input signals of N channels at the decoder (fig.2
(32); col.13 line 1-17/to regenerate the original output signal
with frequency inherently by filtering for enabling such band
selection).

     However, Heere et al. fail to disclose of using an all-pas
filter. But, official notice is taken having all-pass filter is
well known in the art. Thus, it would have been obvious for one
of the ordinary skill in the art to have modified the above with
all-pass filter for enabling regenerating of the original
signal.

7.   Claims 8, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Herre et al. (7,447,317 B2) and kinoshita et al. (US 5,982,903).


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Re claim 8, the encoder according to claim 6, wherein

calculation of at least one of the phase differences, coherence

data and the power ratios (see claim 6), but Herre et al. fail

to disclose of the specific wherein said calculation is followed

by principal component analysis (PCA) and/or inter-channel phase

alignment to generate the N output signals. kinoshita et al. .

Disclose of a system wherein said calculation is followed by

principal component analysis (PCA) to generate output signals

(col.12 line 15-35; col.13 line 35-45/analysis on signals).

Thus, it would have been obvious for one of the ordinary skill

in the art to have modified the combination with calculation is

followed by principal component analysis (PCA) to generate

output signals for obtaining sound signal of most signal energy

for localizing sound image.


Re claims 18 have been analyzed and rejected with respect to

claim 8.
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6.   Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable Herre et al.

(7,447,317 B2) as evidence by Myburg et al. (US 20080195397 A1).

Re claim 24, the decoder according to Claim 23, wherein the

processor is operable to split signals of the M channels and

decorrelated versions thereof into their constituent components

for regenerating said one or more input signals of N channels at

the decoder (fig.5 (4=54,56,52); fig.2 (32,36)/signal

synthesized is split to reproduced original signals).

However, Herre et al. fail to disclose of the inverse

encoder rotation. But, official notice is taken using the

inverse encoder rotation is well known in the art as evidence by

Myburg et al. (par [0062]). Thus, it would have been obvious for

one of the original skill in the art to have used the inverse

encoder rotation for recreating the original signals.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to DISLER PAUL whose telephone number is (571)270-

1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./
Examiner, Art Unit 2614

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614

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